

CLAIMS

1. An application file to be carried on an optical disc, wherein the application file incorporates information and control data for an application, and wherein, to
5 provide copy protection for the application, DSV data patterns as hereinbefore defined are incorporated in the application file, the DSV data patterns being located in the application file in a manner to ensure that they will be accessed by a player or a reader of an optical disc carrying the application file.
- 10 2. An application file as claimed in Claim 1, wherein the DSV data patterns are located in the information incorporated in the application file.
3. An application file as claimed in Claim 1 or Claim 2, wherein the DSV data patterns are incorporated in locations of the application file which are
15 normally accessed upon use of the application file.
4. An application file as claimed in Claim 3, wherein the DSV data patterns are located in control data incorporated in the application file and/or in control data incorporated in a header of the application file.
- 20 5. An application file as claimed in any preceding claim, wherein control data in the application file and/or the control data in a header of the application file includes at least one pointer or offset pointing to the location of DSV data patterns in the application file.
- 25 6. An application file as claimed in any preceding claim, wherein the DSV data patterns are chosen to cause DSV problems for optical disc writers.
7. An application file as claimed in any preceding claim, wherein the DSV
30 data patterns are chosen to ensure that the DSV has a significant absolute value.
8. An application file as claimed in any preceding claim, wherein the DSV data patterns are repeated patterns of values.
- 35 9. An application file as claimed in any preceding claim, wherein the size of the DSV data patterns is a predetermined amount.

10. An application file as claimed in any preceding claim, wherein the DSV data patterns are arranged to produce a DSV which has a rapid rate of change.
- 5 11. An application file as claimed in any preceding claim, wherein the DSV data patterns are arranged to produce a DSV which has a substantial low frequency component.
- 10 12. An application file as claimed in any preceding claim, wherein areas of data containing only zeros are incorporated in the application file before, and/or after, and/or before and after areas containing the DSV data patterns.
- 15 13. An application file as claimed in any preceding claim, wherein the information in the application file comprises one or more of: audio data, numerical data, text data, video data, graphics data, program data, animation data and/or any other data.
- 20 14. An application file as claimed in any preceding claim, wherein the control data in the application file comprises descriptors of the information and/or data enabling access to the information.
- 15 15. An application file as claimed in Claim 13, wherein the access enabling control data comprises navigation and/or timing data.
- 25 16. A method of copy protecting an application, where the application is provided by an application file to be carried on an optical disc and incorporating information and control data, the method comprising incorporating into the application file, before its application onto an optical disc, DSV data patterns as hereinbefore defined.
- 30 17. A method of copy protecting an application as claimed in Claim 16, further comprising locating the DSV data patterns in the application file in a manner to ensure that they will be accessed by a player or reader of an optical disc carrying the application file.
- 35 18. A method of copy protecting an application as claimed in Claim 17, further comprising locating the DSV data patterns in the information incorporated in the application file.

19. A method of copy protecting an application as claimed in Claim 17 or Claim 18, wherein the DSV data patterns are incorporated in locations of the application file which are normally accessed upon use of the application file.

20. A method of copy protecting an application as claimed in Claim 19, wherein the application file has control data and/or a header in which control data is incorporated, and further comprising locating the DSV data patterns in the control data.

21. A method of copy protecting an application as claimed in any of Claims 17 to 20, wherein the application file has control data and/or a header in which control data is incorporated, and further comprising including at least one pointer or offset in the control data which points to the location of the DSV data patterns in the application file.

22. A method of copy protecting an application as claimed in any of Claims 16 to 21, wherein said DSV data patterns have been chosen to cause DSV problems for optical disc writers.

23. A method of copy protecting an application as claimed in any of Claims 16 to 22, wherein the DSV data patterns are chosen to ensure that the DSV has a significant absolute value.

24. A method of copy protecting an application as claimed in any of Claims 16 to 23, wherein the DSV data patterns are repeated patterns of values.

25. A method of copy protecting an application as claimed in any of Claims 16 to 24, wherein the size of the DSV data patterns is a predetermined amount.

26. A method of copy protecting an application as claimed in any of Claims 16 to 25, wherein the DSV data patterns are arranged to produce a DSV which has a rapid rate of change.

27. A method of copy protecting an application as claimed in any of Claims 16 to 26, wherein the DSV data patterns are arranged to produce a DSV which has a substantial low frequency component.

28. A method of copy protecting an application as claimed in any of Claims 16 to 27, further comprising incorporating into the application file areas containing only zeros before, and/or after, and/or before and after areas containing the DSV data patterns.

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29. A copy protected optical disc carrying an application, wherein the application is defined by an application file as claimed in any of Claims 1 to 15, and wherein the application file has been applied to the optical disc.

10 30. A copy protected optical disc carrying an application as claimed in Claim 29, wherein the application file has been applied to the optical disc by a mastering process utilising an encoder with "look ahead" capabilities.

15 31. A copy protected optical disc carrying an application as claimed in Claim 29, wherein the application file has been applied to the optical disc by a mastering process utilising an encoder controlling a laser beam recorder.

20 32. A copy protected optical disc carrying an application, wherein the application is defined by an application file which has been copy protected as claimed in any of Claims 16 to 28, and wherein the application file has been applied to the optical disc.

25 33. A copy protected optical disc carrying an application as claimed in Claim 32, wherein the application file has been applied to the optical disc by a mastering process utilising an encoder with "look ahead" capabilities.

30 34. A copy protected optical disc carrying an application as claimed in Claim 32, wherein the application file has been applied to the optical disc by a mastering process utilising an encoder controlling a laser beam recorder.

35 35. A storage device for use in a process of mastering optical discs, wherein the storage device carries an application file to be carried on the optical discs, the application file incorporating information and control data for an application, and wherein DSV data patterns as hereinbefore defined are incorporated in the application file.

36. A storage device for use in a process of mastering optical discs as claimed in Claim 35, wherein the DSV data patterns are located in the application file in a manner to ensure that they will be accessed by a player or a reader of an optical disc carrying the application file.

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37. A storage device for use in a process for mastering optical discs as claimed in Claim 35 or Claim 36, wherein the DSV data patterns are chosen to cause DSV problems for optical disc writers.

10 38. A storage device as claimed in any of Claims 35 to 37, wherein the DSV data patterns are chosen to ensure that the DSV has a significant absolute value.

15 39. A storage device as claimed in any of Claims 35 to 38, wherein the DSV data patterns are repeated patterns of values.

40. A storage device as claimed in any of Claims 35 to 39, wherein the size of the DSV data patterns is a predetermined amount.

20 41. A storage device as claimed in any of Claims 35 to 40, wherein the DSV data patterns are arranged to produce a DSV which has a rapid rate of change.

25 42. A storage device as claimed in any of Claims 35 to 41, wherein the DSV data patterns are arranged to produce a DSV which has a substantial low frequency component.

43. An application file to be carried on an optical disc substantially as hereinbefore described with reference to the accompanying drawings.

30 44. A method of copy protecting an application substantially as hereinbefore described with reference to the accompanying drawings.

45. A copy protected optical disc carrying an application substantially as hereinbefore described with reference to the accompanying drawings.

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46. A storage device for use in mastering optical discs substantially as hereinbefore described with reference to the accompanying drawings.

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